

REMARKS

Re-examination and reconsideration of the subject matter identified in caption, pursuant to and consistent with 37 C.F.R. §1.112, and in light of the remarks which follow are respectfully requested.

Claims 1, 2, 4 and 7-10 were rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 5,171,629 to Heidel et al in view of U.S. Patent No. 4,714,651 to Hartmann et al for reasons set forth in paragraph (3) of the Office Action. Reconsideration of this rejection is respectfully requested for at least the following reasons.

In the last response, Applicants listed at least three major differences between the presently claimed laminates and those described in Heidel et al '629:

- (a) Heidel '629 requires a non-woven glass fiber layer;
- (b) Heidel '629 requires a melamine-formaldehyde pre-condensate binder for final consolidation;
- (c) Heidel '629 does not needle the layers together such that a part of the organic filaments penetrate through the laminate and emerge from the lower fiber layer and lie adjacent thereto.

The invention of Heidel '629 resides in eliminating the disadvantages of prior art laminates which used acrylate or styrene resins for end-consolidation. Thus, the substitution by the reference of a specific melamine-formaldehyde pre-condensate for the acrylate and styrene consolidators used in the prior art was designed to overcome the enumerated deficiencies in the prior art laminates.

The rejection in the Office Action is based on the premise that it would have been obvious to those of ordinary skill to modify the invention of Heidel '629 and replace the melamine-formaldehyde pre-condensate with the prior art end consolidators, i.e. precisely the materials which, according to Heidel '629, yielded inferior products. The modification proposed by the Examiner would render the laminates of the reference unsatisfactory for their intended purpose. Why would those of ordinary skill be motivated to make the substitution proposed by the Examiner when to do so would lead to inferior laminates?

Hartmann '651 discloses roofing and sealing products impregnated with bitumen and having a carrier material composed of at least one non-woven layer of organic fibers. Optionally, the carrier may have at least one fabric layer of inorganic material. Suitable optional layers include "less elastic carriers, for example, spun-glass fabrics or woven glass fabrics" (column 3, lines 67-68). The carrier layers are not needed. Moreover, Hartmann '651 discloses that woven glass fabrics for roofing materials have decided disadvantages: elongation at break is very low and the "dimensional changes cause by dilatation lead as a rule to cracks because of the lack of elasticity and a low capacity to accommodate working" (column 1, lines 47-51); carrier materials like woven glass do not have "the required temperature-independent elasticity. As a result, cracks and leaks can again occur on the roof due to thermal dilatation" (column 1, line 66 to column 2, line 3). These statements in Hartmann '651 clearly would discourage those of ordinary skill from using woven glass layers in roofing laminates.

The Examiner states on page 3 of the Office Action that those of ordinary skill would be motivated by Hartmann '651 to replace the non-woven glass fiber layer of Heidel '629 with a woven glass fiber layer "motivated by the desire to obtain a carrier web with increased dimensional stability and good workability." Applicants disagree with this statement. The Examiner's position is contrary to the statements in Hartmann '651 as discussed above.

There is no suggestion in Heidel '629 or Hartmann '651 which would motivate those of ordinary skill to replace the non-woven glass fiber layer required in Heidel '629 with the woven layer of glass fibers described merely as an optional component in Hartmann '651. The motivation suggested in the Office Action (increased dimensional stability) is contradicted by statements in Hartmann '651 regarding the disadvantages of using woven glass layers.

There would be no reasonable expectation of success that replacement of the non-woven glass fiber layer with a woven layer would result in laminates having the properties and characteristics desired by Heidel '629. It is well settled that if modification proposed by the Examiner would render the prior art invention unsatisfactory for its intended purpose, then there is no motivation make the desired modification. (In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). Modifying the laminates of Heidel '629 in the manner suggested by the Examiner would render the invention of patentees unsuitable for its intended purpose.

A feature of the claimed invention includes needling such that a part of the organic filaments penetrate through the laminate and emerge from the lower layer and lie adjacent thereto. The Examiner argues that some of the organic filaments would "naturally penetrate through the laminate and emerge at the lower surface" (page 2). Applicants completely disagree with this statement.

Initially, Applicants submit that this conclusion is mere conjecture and not substantiated by any cited authority. As a matter of fact, needling such that the fibers penetrate the lower surface is frequently discouraged to avoid possible damage to the lower surface. As discussed in the specification on page 7, lines 9-11, Applicants employ a needling technique which minimizes damage to the laminates. Thus, one has to take positive steps to ensure that some of the organic fibers penetrate the lower surface and lie adjacent thereto. This does not happen naturally.

The organic filaments which penetrate the lower surface and lie adjacent thereto act to "interlock" or anchor the layers of the laminate. Note page 9, line 24 of the specification. The filaments also serve to anchor the binders used in the final consolidation to the laminate. This feature is not disclosed or suggested in the references relied upon in the rejection.

For at least the above reasons, the §103(a) rejection based on Heidel '629 in view of Hartmann '651 should be withdrawn. Such action is respectfully requested.

Claims 5, 6 and 11-13 were rejected under 35 U.S.C. §103(a) as unpatentable over Heidel et al '629 and Hartmann et al '651 as applied to claims 1, 2, 4 and 7-10 above, and

further in view of U.S. Patent No. 6,235,657 to Schops et al for the reasons expressed in paragraph (4) of the Office Action. Reconsideration of this rejection is requested for at least the reasons which follow.

The deficiencies of the patents to Heidel '629 and Hartmann '651 have been discussed above in connection with the rejection of claims 1, 2, 4 and 7-10. Heidel '629 requires a non-woven glass fiber layer and a melamine-formaldehyde condensate. There is no disclosure in Hartmann '651 which would motivate one of ordinary skill in the art to replace the non-woven glass fiber layer of Heidel '629 with a woven glass fiber layer. There is no disclosure in these patents of needling the layers together in such a manner that part of the organic filaments penetrate through the laminate and emerge at the lower surface and lie adjacent thereto.

Schops '657 does not supply the aforementioned deficiencies in the basic combination of Heidel '629 with Hartmann '651. The laminated articles described in Schops '657 include two non-woven synthetic fiber layers having an intermediate reinforcing layer therebetween. The intermediate layer comprises laid reinforcing filament preferably of glass fibers. The laminate of Heidel '629 consists of two layers and does not have a glass fiber layer composed of laid reinforcing filaments. Thus, the laminates of Heidel '629 are totally different from those of Schops '657. Those of ordinary skill in this art would not be motivated to combine the teachings of Schops '657 with the disclosures of Heidel '629. One could not reasonably predict that modifying the laminates of Heidel '629 in the manner suggested by the Examiner would be successful. Applicants respectfully

submit that there is a total lack of any suggestion in the cited art of laminates having the requisite features specified in Applicants' claimed invention. Accordingly, the combined disclosures of Heidel '629, Hartmann '651 and Schops '657 does not establish a *prima facie* case of obviousness.

For at least these reasons, the §103(a) rejection based on Heidel '629, Hartmann '651 and Schops '657 should be withdrawn. Such action is earnestly requested.

Claim 3 was rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629 and Hartmann '651 and further in view of U.S. Patent 5,616,395 to Baravian et al for the reasons expressed in paragraph (5) of the Office Action. Claim 14 was rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629, Hartmann '651 and Schops '657 and further in view of U.S. Patent 4,816,327 to Binnersley et al for the reasons set forth in paragraph (6) on page 7 of the Office Action. Claim 15 was rejected under 35 U.S.C. §103(a) as unpatentable over Heidel '629 and Hartmann '651 and further in view of U.S. Patent 5,571,596 to Johnson for the reasons set forth in paragraph (7) of the Office Action. Reconsideration and withdrawal of these rejections are requested for at least the following reasons.

Baravian '395, Binnersley '327 and Johnson '596 have been applied because they allegedly disclose the features of claims 3, 14 and 15. The disclosures of these patents do not supply the deficiencies of the §103 rejection based on the combination of Heidel '629 and Hartmann '651 for reasons fully discussed above. Accordingly, the various §103 rejections which rely on Baravian '395 or Binnersley '327 or Johnson '596 do not establish

a *prima facie* case of obviousness and these rejections should be withdrawn. Such action is respectfully requested.

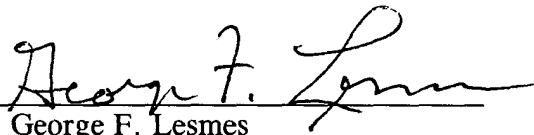
From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned at (703) 838-6683 at her earliest convenience.

Respectfully submitted,

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